



## Managing Aqueous Cleaner Wastes

Aqueous cleaners or parts washers rely on hot water, agitation, and detergent to break down dirt. These cleaning solutions usually last longer than solvent cleaners and create less waste. The detergents generally are non-hazardous, but as parts are washed, the cleaning solution may get contaminated with solvents, metals, or oil and grease at levels that make the waste solution hazardous. Other wastes that may need special handling include filters and sorbent materials used to capture contaminants from the unit, oil skimmed off the surface, and sludge that accumulates in the unit.

### Disposal/Recycling Options for Wastes

**All solvent-contaminated materials must be managed as hazardous waste.** The following guidance applies to units where no solvent-based cleaners have been used over the aqueous parts washer.

**Spent solution.** Waste cleaning solution must be hauled by a licensed hazardous waste disposal company unless you have had the solution tested by a lab for metals and oil and grease using the Toxicity Characteristic Leaching Procedure (TCLP) to show that it is not hazardous. Disposal costs will vary according to the characteristics of the waste and the volume generated, but will generally be \$2 to \$4 per gallon if it is a hazardous waste and \$1 to \$2 for non-hazardous waste. **Do not dump waste solution in the sewer, septic system, or storm drain.**

**Used Filters.** Used filters may be recycled along with spent engine oil filters with the permission of the recycler. Contact your oil filter recycler to determine if they will take your filters. Some recyclers will only accept used filters encased in metal shells like engine oil filters. If they are not recycled, used filters should be managed as hazardous waste and disposed of by a licensed waste disposal company.

**Sorbents.** Washable sorbents containing no free liquids can be sent to a commercial laundry. Other used sorbents should be managed as hazardous waste and disposed of by a licensed waste disposal company.

**Skimmed Oil.** Oil skimmed from an aqueous cleaning solution can be managed as used oil and recycled. Most recyclers will accept skimmed oil with used motor oil as long as it is not contaminated with solvent.

**Sludge.** Units without filtration may accumulate sludge at the bottom. This sludge may be disposed of along with waste solution. Most waste disposal companies will accept a certain percentage of solids in the waste solution. If the sludge is separated from the solution, the sludge may not be disposed of as solid waste unless tested to show that it is nonhazardous.

### Maximizing Aqueous Solution Life

Extending the life of an aqueous solution will save money by reducing your chemical purchase and waste disposal costs. To maximize aqueous solution life:

- Use the appropriate size and type of unit for your needs.
- Do not use chlorinated aerosols (like brake or carburetor cleaners) or other cleaners over the sink.
- Close and turn off units when not in use to reduce solution evaporation and to keep utility costs down.
- Filter the solution, change filters, and follow other operation and maintenance instructions from the manufacturer to maximize solution life.
- Skim oil to remove floating oil from the solution, reduce the amount of oil left on parts, and extend solution life. Microbial units do not need oil skimming because microbes degrade the oil.
- Accept solution discoloration. Aqueous solutions may turn gray or brown, but this discoloration does not affect cleaning ability. Do not change your cleaning solution just because it looks dirty.
- Change the solution only when necessary, when its cleaning performance declines. Do not change the solution on a scheduled basis.
- Maintain solution concentration. Add chemicals as needed to maintain the cleaning strength of your solution. Some vendors offer easy-to-use test kits to determine when to add chemicals.

## **Reducing Contaminants**

- Pre-clean parts before placing them in the washer. Remove most of the oil, grease and dirt on surfaces before washing by draining, scraping, wire brushing, or wiping with shop towels.
- Use distilled or deionized water for making up cleaning solution – or at least for replenishing evaporation losses. Hard water causes minerals and dissolved solids to build up, increases the amount of alkaline cleaning compounds needed, and decreases cleaner effectiveness.
- Shut down the parts washer heating element after work hours to cool the cleaning solution. This allows emulsified oil to separate from the cleaning solution so that a skimmer can remove the oil. Install an oil skimmer if one is not already in use.

## **Servicing Aqueous Cleaners**

Most auto repair shops enjoy the hassle-free full-service provided by a solvent management company. Some aqueous cleaning vendors offer similar services. A few reasons to consider self-servicing include:

- Aqueous solutions can last significantly longer than solvents and do not need to be changed as often. Even with heavy use, a spray cabinet can clean effectively for as long as 3 months between solution changes. With proper use, microbial sink-top units may clean effectively for several years before requiring solution change.
- Servicing aqueous units requires minimal time and effort. Self-servicing your unit may be easier than you think!

<b>Servicing Requirements</b>	<b>Time to Perform and Frequency</b>
Add water and chemical	10 minutes, daily to every 2 weeks
Skim oil (not on microbial units)	5 minutes, every 2 weeks to every 2 months
Replace filter	5 minutes, every 2 weeks to every 2 months
Drain and replace solution	1 hour, every 2 months to every few years

## **Labeling and Storing Wastes**

- Store the waste in a closed, sturdy container that is compatible with the waste. Use a container that meets the U.S. Department of Transportation shipping requirements.
- Label the container with a clear description of the waste. If it is hazardous waste, add the words “Hazardous Waste” and the accumulation start date (the first date the waste was placed in the container).
- Store the container on an impermeable surface. If you store the container outdoors, place the container on a curbed surface to contain leaks, protect the container from precipitation, and restrict access to it.
- Inspect the container weekly to ensure that it is not leaking. Keep records of the inspection.

## **Keeping Records**

Keep the following records for at least three years:

- Test results or other documentation showing a waste is non-hazardous. Test results should be kept for 3 years from the time you last generated the waste.
- Initial and final hazardous waste shipping manifests (and Land Disposal Restriction forms, if needed).

## **For More Information**

Boulder County Public Health, Environmental Health Division – 303-441-1180  
Partners for a Clean Environment – 303-786-PACE [www.pacepartners.com](http://www.pacepartners.com)  
City of Boulder Wastewater Treatment Plant – 303-413-7340  
City of Longmont Wastewater Treatment Plant - 303-651-8382

## **Sources**

- Managing Aqueous Parts Washers, Minnesota Pollution Control Agency, March 2000. [www.pca.state.mn.us/waste/pubs/4\\_44.pdf](http://www.pca.state.mn.us/waste/pubs/4_44.pdf)
- Aqueous Parts Cleaning, Environmental Protection Agency Region 9, November 1999. [www.epa.gov/region09/cross\\_pr/p2/autofleet/autoclean.pdf](http://www.epa.gov/region09/cross_pr/p2/autofleet/autoclean.pdf)
- Aqueous Parts Cleaning, Colorado Department of Public Health & Environment, November 2001. [www.cdphe.state.co.us/el/documents/auto/aqueous%20cleaning.doc](http://www.cdphe.state.co.us/el/documents/auto/aqueous%20cleaning.doc)
- Aqueous Parts Washing and Pollutant Loadings, Brian Gedlinske, Pollution Prevention Review, Spring 1997.

